

075234 - Rehabilitation Of The Hansen Dam Lower Lakes

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REHABILITATION OF THE HANSEN DAM LOWER LAKES

I. EXECUTIVE SUMMARY:

The Corps seeks to remove the fill it deposited in the Lower Lakes in 2002, and to restore their original contours to the extent that can be done without significantly disturbing the habitat that has grown back since the fill activities occurred. Its proposed action for rehabilitating the Lower Lakes is the only action consistent with its responsibilities under the Clean Water Act.

II. BACKGROUND INFORMATION:

Hansen Dam was constructed between 1939 and 1941 primarily to provide flood protection for communities downstream from it. The dam sits astride Tujunga Wash approximately one-half mile below the confluence of the Big and Little Tujunga Washes, which flow out of the San Gabriel Mountains and the Angeles National Forest. Waters leaving the basin flow into a concrete channel and eventually into the Los Angeles River and San Pedro Bay. The City of Los Angeles, which has leased most of the basin since the 1940s, manages the site according to a master plan approved by the Corps.

Tujunga wash is one of the most active washes in Southern California. Storm events deposit sediment throughout Tujunga wash as it enters the basin; the sediment deposits gradually and naturally fill the basin. To sustain the dam's flood control capability, sand and gravel removal operations were undertaken in the late 1980s through the mid-1990s to remove these sediment deposits and maintain the basin's design capacity. Two lakes were inadvertently created when two sand and gravel borrow pits filled with ground-water and other inflow associated with Tujunga Wash. They have come to be known as the "Large Lower Lake" and the "Small Lower Lake." (Figure 1). The borrow pits were to be sloped to drain toward the dam before the sand and gravel removal operation ended. For reasons unrelated to the current situation, the sand and gravel removal contract expired before the pits were reconfigured to drain.

The two lakes are located upstream from the dam and lie at the confluence of the Big and Little Tujunga washes. The Lower Lakes are separate and distinct from the Recreation Lake Complex constructed by the Corps in 1999.

The first discharge of fill into the Lower Lakes occurred in May 2002 when approximately 1,650 cubic yards of reinforced concrete rubble were deposited in the northwestern corner (the deepest area) of the Large Lower Lake. The fill material had been gathered from the bottom of the Hansen Dam Swim Lake while it was under repair. This material was capped by approximately 2,200 cubic yards of clean soil from the same swim lake repair project. The fill area measures 150 feet long by 145 feet wide, and projects five feet into the water.

In the spring of 2002, shortly after the first discharge, the Corps placed approximately 1,300 cubic yards of soil mixed with dead, non-reproductive, chipped and mulched giant reed (*Arundo donax*), and a minor amount of other refuse, in the Small Lower Lake and in several piles north of the lake. (Figure 4). The fill material came from Sepulveda and Whittier Narrows flood basins when the Corps cleared the flood control channels as part of its routine operation and maintenance of those channels. The fill area measures approximately 170 feet long by 100 feet wide and up to three feet deep.

The Corps ceased filling at the Lower Lakes in June 2002. To determine the potential impact of the fill on the water quality, we performed water quality analyses in December 2002, March 2003 and again in October 2003. (Figure 5) These studies show the fill activity did not pollute the lakes or degrade the habitat. The only contaminants that the studies detected were also found in the upstream background surface water samples, and can be attributed to non-point source pollution associated with over a century of agricultural and urban land use in the watershed above the Basin, as well as from horse manure associated with riding near the lakes.

III. CORPS'S CORRECTIVE MEASURES

The Corps initiated corrective measures in the spring and summer of 2003. On July 29, 2003, we removed and disposed in a landfill approximately 150 cubic yards of material stockpiled adjacent to the Small Lower Lake. (Figure 6). No material remained on the shore. (Figure 7). The removal was performed with minimal disturbance to the contiguous habitat. (Figures 6 and 7).

Beginning in July 2003, and continuing to the present, we have been removing all rebar visible along the shoreline of the Large Lower Lake. These efforts are consistent with the Corps's commitment to ensuring the safest possible conditions for people frequenting the area.

The Corps is eager to proceed with the full rehabilitation and mitigation measures we proposed in our Environmental Assessment, dated November 14, 2003, but are prevented from proceeding until the Regional Board revises its November 21, 2003 order to permit us to do so.

IV. RECENT SITE INVESTIGATIONS

In its November 21, 2003 order, the Regional Board questioned the accuracy of the Corps's estimates of the area and volumes of fill placed at the Lower Lakes. The Corps's Environmental Assessment explains the measurements and computations upon which these estimates were based.

Additional site investigations conducted after the Corps's Environmental Assessment have confirmed the accuracy of the area and volume estimates that it sets forth, and support the reasonableness of its remediation and mitigation proposal.

The Environmental Assessment estimated that 1,300 cubic yards of fill were placed in and alongside the Small Lower Lake. The subsequent surveys, including measurements of materials that the Corps subsequently removed from the shoreline of the Small Lower Lake, confirm that this estimate was accurate.

The concrete materials remaining at the Large Lower Lake are more easily identified than the mulch mixed with soil placed in the Small Lower Lake, and the November 21, 2003 order of the Regional Board did not question the Corps's defined area of impact at the Large Lower Lake.

In December 2003, subsequent to the completion and distribution of its Environmental Assessment, the Corps completed surveys of the Lower Lakes. Results of those surveys were delivered to the Regional Board on January 20, 2004. In addition, the Corps delivered to the Regional Board copies of construction records indicating cubic yard quantities of Swim Lake demolition debris placed in the Large Lower Lake by the contractor. The construction records verify the figures relating to the volumes of reinforced concrete placed in the Large Lower Lake that are contained in the Environmental Assessment.

On January 29, 2004, the Corps visually confirmed the areas impacted by fill activities. A visual inspection of the Lower Lakes complex was conducted with the assistance of trained divers. (Figure 8). Photographs of the surrounding area and of the bottom of both lakes were taken at locations marked with buoys outlining the extent of the fill at each lake. Global Positioning System (GPS) coordinates of the buoy locations were taken to outline the fill areas. The Corps is overlaying this data on the survey plots previously produced. The data collected further supports the estimates of areas impacted by filling at the Lower Lakes reported in the Corps's Environmental Assessment.

The Regional Board's initial order questioned the results of water quality testing that the Corps submitted to the Board in its October 15, 2003 submission. In response, the Corps conducted additional water quality testing on October 16, 2003, with the assistance of SOTA. These test results were consistent with the prior test results, and indicated that levels of contaminants were no higher in the areas of the Lower Lakes where the Corps had placed fill than in upstream background water samples.

Fate and transport modeling study, two types of data analysis used by hydrologists and environmental scientists, and site-specific risk assessment are under way. The draft studies further support the conclusions of the earlier water quality studies. We anticipate that the Final Site Assessment Report, with the Fate and Transport Modeling Study and Site Specific Risk Assessment included as appendices, will be completed by the end of April 2004.

V. PROPOSED ACTIONS

The Corps's proposed remediation and mitigation plan, more fully explained in the Environmental Assessment, is designed to remove the fill deposited in the Lower Lakes in 2002, and to restore the lakes's original contours to the extent that can be done without significantly disturbing the habitat that has grown back since the fill activities occurred. The Corps's plan is the only action proposed to date that is consistent with the Corps's responsibilities under the Clean Water Act and the Guidelines implementing that Act, to perform the Least Environmentally Damaging Practicable Alternative.

The Corps's proposed action includes the removal of approximately 2,000 cubic yards of fill material from the top 3 feet of the fill area at the Large Lower Lake and the removal of all identifiable fill material at the Small Lower Lake. All removal actions would be done using a long-reach excavator, like the one pictured in Figure 9. At each of the lakes, the

excavation equipment would be positioned to minimize the impact to the surrounding habitat. At the Large Lower Lake, equipment would be placed 5 feet back from the shoreline to begin extraction at the toe of the fill, and would be moved back incrementally to continue extraction. While at the Small Lower Lake, an access pad would be created by partially flattening the unsafely steep slope there. All removal activity will avoid disturbing the densely vegetated fresh water marsh areas that exist at both lakes, and silt curtains will be installed during excavation to trap any suspended particulates and thus prevent adverse turbidity impacts.

Excavated material will be temporarily stockpiled adjacent to each of the extraction sites, to allow excess water to drain from the material prior to removal for proper disposal. After draining, the soil and other materials from the Small Lower Lake and the concrete from the Large Lower Lake will be disposed of in an approved landfill. The clean soil from the Large Lower Lake will be recycled through beneficial re-use.

To ensure that the removal activities are successful, visual surveys, including photographs using the same GPS coordinates and buoy locations used for the January 29, 2004 visual survey, will be conducted. Quarterly monitoring of the water quality at both lakes would continue for one year after removal.

After the removal activities are completed, mitigation would begin. Mitigation activities would include restoration of the shoreline at the Large Lower Lake, and completion of the laying back of the dangerously steep shoreline at the Small Lower Lake to a safer 3:1 slope ratio. Removal of non-native plants and replanting of native species would occur at both lakes. Replanting would be followed by adaptive management, such as irrigation, and even a second round of replanting, if necessary. The mitigation sites would be maintained and monitored by the Corps for 5 years, the standard monitoring period for Clean Water Act mitigation activities. One-and-a-half acres would be restored at the Large Lower Lake, and 0.9 acre would be restored at the Small Lower Lake, for a total restoration of 2.4 acres, an area three times larger than that originally impacted by the Corps's fill activities.